



## **ADEQUACY OF THE SKILLED WORKFORCE IN AUSTRALIA IN THE DEFENCE CONTEXT**

Directorate of Strategic Personnel Planning and Research  
DSPPR Technical Note 8/2001  
October 2001

Report Documentation Page			Form Approved OMB No. 0704-0188		
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE <b>00 OCT 2001</b>		2. REPORT TYPE <b>N/A</b>		3. DATES COVERED <b>-</b>	
4. TITLE AND SUBTITLE <b>Adequacy of the Skilled Workforce in Australia in the Defence Context</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Director of Strategic Personnel Planning and Research</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release, distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>Also see: ADM 001543, DSPPR Technical Note 8/2001, The original document contains color images.</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>UU</b>	18. NUMBER OF PAGES <b>24</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



# **ADEQUACY OF THE SKILLED WORKFORCE IN AUSTRALIA IN THE DEFENCE CONTEXT**

P.C.P. Ong,  
Commander, RAN  
DSPPR

The findings and views expressed in this report are the results of the author's research studies and are not to be taken as the official opinion of the Department of Defence

Copies of DSPPR reports are available from:

<http://defclus01.cbr.defence.gov.au/dsppr/>

DSPPR Information Officer

Telephone: 02-62663435

Facsimile: 02-62662982

© Commonwealth of Australia 2001

This work is copyright. Apart from any fair dealing for the purpose of study, research, criticism or review, as permitted under the Copyright Act 1968, no part may be reproduced by any process without written permission from the Department of Defence.

Requests and inquiries should be addressed to the Director Strategic Personnel Planning and Research, Defence Personnel Executive Program, Department of Defence, Canberra ACT 2600.

## Table of Contents

Table of Contents .....	i
List of Tables.....	ii
List of Figures .....	iii
Background .....	1
Labour Force Projections .....	2
The Job Market.....	4
The ADF Under-strength Strategically Significant Positions.....	7
Navy .....	7
Army.....	7
Air Force.....	8
Conclusion.....	9
ANNEX A – Job Prospects Matrix .....	11
ANNEX B – ADF Under-Strength Strategically Significant Positions.....	13

## List of Tables

<b><u>Table</u></b>		<b><u>Page</u></b>
Table 1	Projected Jobs growth 1999-00 to 2005-06	4
Table 2	Permanent Employment Expectations by Industry	5
Table 3	Job Prospect Matrix & Projected Jobs Growth – Prospects to 2005-06	11
Table 4	Under-Strength Strategically Significant Positions	
	- Navy	13
	- Army	14
	- Air Force	15

## List of Figures

<b><u>Figure</u></b>		<b><u>Page</u></b>
Figure 1	Age Structure of the Population and the Labour Force	2
Figure 2	Labour Force Increment Per Year	3





## Background

This paper addresses the fifth Term of Reference (TOR) for the inquiry *Enterprising Australia – planning, preparing and profiting from trade and investment*, conducted by the Joint Standing Committee on Foreign Affairs and Trade (Trade Sub-Committee). This TOR is concerned with:

*“ The adequacy of a skilled workforce in Australia particularly in new growth areas such as, though not limited to, financial services, information technology, E-business, education, pharmaceuticals and health care, and the competitiveness of that workforce.”*

As of 4 January 2001, the Australia Defence Force (ADF) has a total of 49,458 permanent members, a reduction of 7737 or 13.5% in five and a half years (in June 1996 the ADF Strength was 57,195).<sup>1</sup> The recent Defence White Paper, *Defence 2000 – Our Future Defence Force*, announced an increase to about 54,000 full-time personnel by 2010.<sup>2</sup> This is translated into Navy 14,000 personnel (12,200 as at 4 January 2001), Army 26,000 personnel (23,913 as at 4 January 2001) and Air Force 13,600 (13,345 as at 4 January 2001). It will be a difficult task for the ADF to achieve the target numbers as the Australian economy has continued to improve with an unemployment rate of 6.3% in October 2000 and forecasts to go lower.<sup>3</sup>

Against this background, and in addressing the TOR, analysis will be provided of:

- a) General labour force projections based on the Australian Bureau of Statistics (ABS) information;
- b) The job market and the growth of selected industries; and
- c) How these factors impact on the under-strength of strategically significant occupations in the three Services of the ADF.

---

<sup>1</sup> Defence Information System – Personnel as at 17 Jan 01.

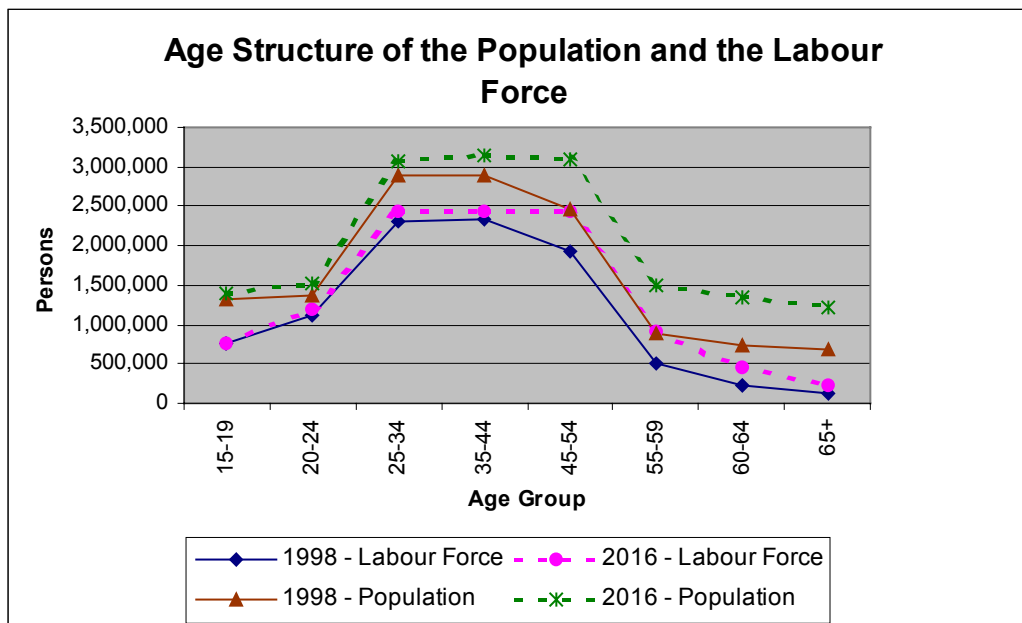
<sup>2</sup> Defence 2000 – Our Future Defence Force, Defence Publishing Service, 2000, p.62.

<sup>3</sup> Labour Force – October 2000, ABS 6203.0, 20000, p.3.

## Labour Force Projections

The average Australian population growth has been declining since the 1960s, that is from 2.0% per year to 1.1 % per year in the 1990s.<sup>4</sup> Unfortunately growth is projected to reduce to 0.9% per year in the 2000s and a further reduction to 0.7% in the following decade. It is important when reading such statistics to understand that the Australian population will still grow but at a reduced rate. In line with the declining population growth is also the declining labour force growth, that is from an average of 0.8% per year over the period 1998-2016 from 1.9% between 1978-1998.<sup>5</sup> Labour Force is defined by the ABS as persons who are employed or unemployed. Another useful indicator of the number of people available in the workforce is the participation rate and it is projected to decline to 60.6% in 2016 from the highest level of 63.7% in 1990. The ABS defined participation rate as the labour force expressed as a proportion of the civilian population aged 15 and over in the same group.

A well-known phenomenon occurring in all developed countries is the 'Ageing Population'. Over 80% of the projected labour force growth is going to be the over 45s age group. Figure 1 below shows the 1998-population structure and labour force projected to 2016. The population graph shows the ageing population and its impact on the labour force. Many employers may have to retain experienced but older employees longer than expected and may have to develop good human resource strategies to attract new staff.



Source: ABS 6260.0 Labour Force Projection - 1999-2016, 2000, p.14, ABS 3103.0 Australian Demographic Statistics - March Quarter 2000, p.20, PC Ausstats Table 1A Projections of Population by Age - 1999-2051 dated 23 Jan 01.

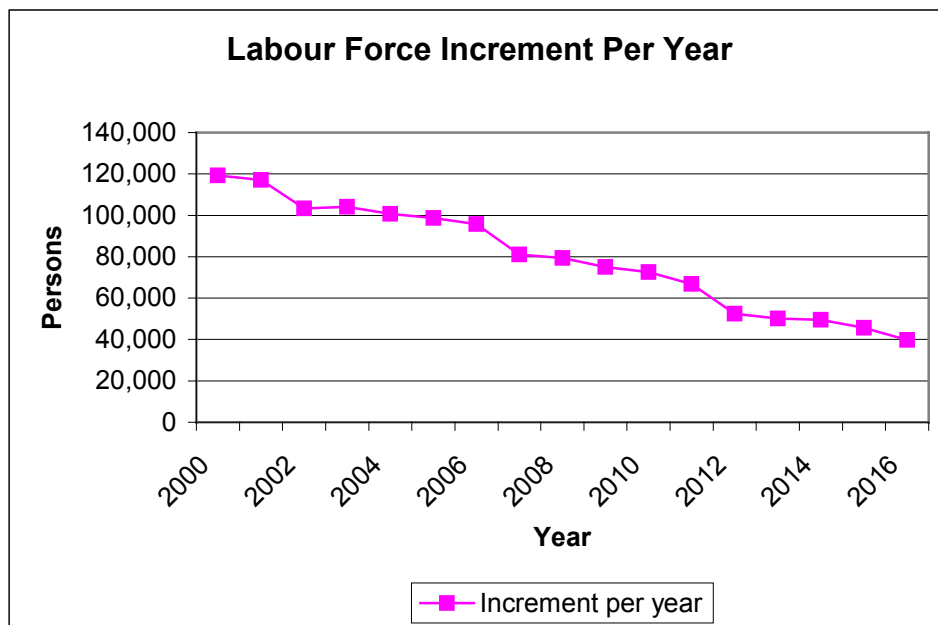
Figure 1: Age Structure of the Population and the Labour Force

<sup>4</sup> Labour Force Projections – 1999-2016, ABS 6260.0, 2000, p.5.

<sup>5</sup> *Ibid*, p.8.

The growth in the labour force for females is expected to be 1.1% between 1998 and 2016 which is larger than for males at 0.6%. Therefore, the female participation rate is also projected to increase. In 1998, 43.28% of labour force was females, but females made up of 50.24%<sup>6</sup> of the total Australian population. They are expected to provide a good supply of personnel in the future and are also becoming better educated. For example, in 1989, women in the 20-24 age group made up of 49% of higher education students and 47 % for those in the 25-44 age group. In 1999, these percentages increased to 52% and 55% respectively.<sup>7</sup>

The overall net increase (the result of people entering and leaving the workforce) in the number of people entering the workforce is projected to decrease in the next two decades, that is from about 120,000 people per year in 2000 to about 40,000 people per year in 2016. Figure 2 shows the declining trend in the supply of the labour force. The ABS assumed that the fertility rate would remain stable at 1.75 babies per women or fall to 1.6 babies per women, the rate of change of mortality would remain as in recent years and net migration policy would remain at 70,000 per year or rise to 90,000.



Source: Labour Force Projections - 1999 – 2016, ABS 6260.0, 2000, p.14.

Figure 2: Labour Force Increment Per Year

All the labour force statistics have significant impacts on the supply of labour. The situation is not expected to get better and the labour market would be very tight in the future. Employers will have to target the non-traditional sources of labour that could include females and the ethnic minority groups. The challenge for all employers is how to attract and retain staff.

<sup>6</sup> Australian Demographic Statistics – March Quarter 2000, ABS 3101.0, 2000, p.14.

<sup>7</sup> Australian Social Trends 2000, ABS 4102.0, 2000, p.95.

## The Job Market

The job market is the demand part of the labour market. This part of the analysis will look at the selected industries and their projected job growth. This can then be compared with the occupations within the ADF. The Department of Employment, Workplace Relations and Small Business (DEWRSB) provides employment trends for the next five years. Table 1 is an abstract of the information provided by DEWRSB relevant to the ADF. It shows that the job growth for industries in the Retail, Accommodation/Cafes/Restaurants, Property/Business Services, Health/Community Services, Cultural/Recreation Services and Personal Services sectors are all above two percent. To further support the optimistic job outlook, Morgan and Banks November 2000 - January 2001 quarterly Job Index Survey shows that 41.9% of all Australian companies intend to hire permanent staff in the next quarter.<sup>8</sup> This is the highest level of optimism since the Job index began in April 1995. Table 2 shows the results of Morgan & Banks Job Index Survey for major industry groupings.

<b><i>Industry</i></b>	<b><i>Jobs Growth % p.a.</i></b>
Retail Trade	2.1
Accommodation, Cafes and Restaurants	2.7
Transport and Storage	1.2
Communication Services	1.5
Finance and Insurance	0.4
Property and Business Services	4.2
Government Administration	0.3
Education	1.8
Health & Community Services	2.2
Cultural/Recreation Services	2.5
Personal and Other Services	2.3

Source: ABS Labour Force Survey - May 2000, DEWRSB trend data.

Table1: Projected Jobs Growth 1999-00 to 2005-06

<sup>8</sup> Morgan & Banks, 'Australia Wins Gold Again – Record Breaking Result for the Job Market', Morgan & Banks Internet Site, 11 Jan 2001.

**Nov 2000 - Jan 2001**

<b>Industry</b>	<b>Increase</b>	<b>Steady</b>	<b>Decrease</b>
Advertising	50.0%	43.5%	3.7%
Chemical/Oil	26.6%	59.5%	12.7%
Construction/Property	32.6%	50.8%	16.6%
Education	29.2%	61.5%	9.2%
Electronics	41.7%	46.7%	10.0%
Engineering	37.0%	55.1%	7.9%
Financial Services/Insurance	43.7%	45.4%	9.2%
Food/FMCG	35.0%	54.0%	9.4%
Government	29.8%	60.6%	9.3%
Health/Med/Pharm	36.2%	54.1%	8.2%
Info Technology	68.2%	28.3%	2.6%
Legal	70.6%	27.3%	2.1%
Manufacturing	27.5%	58.3%	13.3%
Media	36.1%	55.5%	7.6%
Non-Profit	24.7%	71.2%	2.7%
Resources	30.6%	54.2%	15.3%
Retail	36.1%	58.0%	5.9%
Services	47.9%	46.0%	5.8%
Telecomm's	67.2%	27.2%	5.1%
Tourism	33.3%	60.0%	4.8%
Transport	31.8%	51.4%	16.2%
Utilities	34.5%	53.6%	11.9%
<b>All Industries</b>	<b>41.9%</b>	<b>48.8%</b>	<b>8.4%</b>

Source: Morgan & Banks Internet Site, Job Index November 2000-January 2001

Table 2: Permanent Employment Expectations by Industry

The optimistic job outlook will result in better employment opportunities for prospective employees. This will provide more avenues for those deciding to leave the ADF or for those deciding to join the ADF. The situation is further aggravated by the increased demand for highly skilled workers in Australia. 'High skilled workers' is defined as managers, administrators, professionals and para-professionals and 'other workers' as trades persons, clerks, salespersons/personal service workers, plant/machine operators/drivers and labourers/related workers.<sup>9</sup> The high skilled workers share of the employment market increased to around 12% from 1986 to 1998 (7% between 1978-1985).<sup>10</sup>

DEWRSB produces the Job Prospects Matrix for the next five years. The matrix provides three ratings 'Good, Average and Limited' for job prospects and five ratings 'Strong, Moderate, Slight, Remain Steady and Decline' for projected jobs growth for each occupation. There are about 400 occupation types in the list. It is a good indicator for ADF occupations. Annex A contains Table 3, an abstract of the Job Prospects Matrix produced in September 2000 which

<sup>9</sup> De Laine C., Laplagne P., Stone S., 'The Increasing Demand for Skilled Workers in Australia: The Role of Technical Change', Productivity Commission, September 2000, p.x.

<sup>10</sup> *Ibid.*, p.8.

looks at Job Prospects and Projected Jobs Growth. The occupations selected are those similar to the ADF and include jobs that many ADF members can take up if they leave the organisation. Jobs with significant potential are Management type jobs (for example: Human Resource, Project Management, Policy Analyst), Interpreters and Translators, IT, Cooks, Fitness Instructors and Marketing.

Table 1 shows the government job growth forecast of 0.3% is very low compared to other industries and would affect the ability to attract employees. It will be a huge challenge for government employers to recruit the cream of the labour force. Tables 2 and 3 show that the Service and Information Technology related occupations have a great potential for huge growth. They will be the cause of future tight labour market.

## **The ADF Under-strength Strategically Significant Positions**

Table 4 at Annex B contains the ADF under-strength strategically significant positions. The ADF has significant problems filling those positions. The reasons for the difficulties are stated at the 'Reason for Difference' column. Most of the problems are the result of expanding requirements, the high separation rates and the inability to achieve recruiting targets.

### **Navy**

Table 3 at Annex A shows that Pilot job prospects are average and projected to grow slightly, therefore, the threat would not be significant from the outside. The reasons for the shortage of Navy Pilots would most probably come from within the organisation. The challenge is to ensure the retention rate is good and to project a good image of the Navy. Ship's Officers job prospects are rated as average and growth projected to be slight. Although the shipping industry is not in direct competition for such labour, there are other occupations that would attract and have been known to attract Seaman Officers. Some of the occupations are Financial Advisers, Project Management and Human Resources. The prospects and job growth for these jobs are good and strong respectively. Therefore, there is strong external competition to attract people to be Seaman Officers. The Computing or IT industry has good job prospects and strong growth according to Table 3. This is an industry that would attract people who would otherwise choose to be Observers, and Combat System Operators. These occupations are extensive users of IT. The solution to the Marine Technician category problem lies within the organisation since the prospect for this occupation group is average and the job growth prospect is slight.

### **Army**

The Computing or IT industry could again be a source of competition for labour in the Australian Army. For example, Missile Number is a category that uses the computer screen to acquire air targets and hence, members could go into the computing or IT industry if they embark on relevant studies. Table 2 shows that 68.2% of IT employers intend to employ more people within the next quarter. Unfortunately there are also other categories such as Operator Artillery Meteorology and Survey Operator Radar in the same predicament. Table 3 highlighted that the Motor Trades, Interpreters/Translators, Medical, and IT either have strong job prospects and strong growth or both. The competition for labour for Army Vehicle Mechanic, Linguistic Intelligence Special Duty, Medical Assistant and Operator Information Systems and Radios will be significant in the next five years. Problems in the Army Officer workforce at the Captain and Major ranks could also be attributed to the good job prospects and growth for occupations such as Financial Advisers, Project Management and Human Resources. The shortage of personnel for the Commando and Combat Clerk/Storeman streams is attributed to the lack of interest by personnel within the Army and not directly from the external labour market.



## **Air Force**

The Air Force has been known to have the most high technology jobs in the ADF. The IQ test requirement for most of the Air Force occupations is high. Therefore, there will be strong competition for labour from the IT industry who requires the same level of intelligence and skills. Table 3 shows that Pilots, Air Traffic Controllers, Flying Instructors and Aircraft Maintenance Engineers have average job prospects and slight job growth projection. Therefore, the Air Force will not face significant problems from within the Air Transport industry. The Nurse category shortage will be a significant problem for the Air Force since the job prospects for Nurses are good for the next five years.

## **Conclusion**

The growth in the Australian population is projected to decline and hence, a declining growth in the labour force. The population is also ageing and a significant number of the workforce will be over 45 years. This means the competition for the younger workforce will intensify. Organisations will have to look at the non-traditional labour force such as females and the ethnic minorities or even restructure to allow for older people to continue working.

The job market, prospects and growth for many occupations are bright for future employees. This is a recipe for a very tight labour market that will make it an employee's market. Employees will be able to dictate the terms and conditions of their employment and will not hesitate to leave an organisation that does not look after its workers. Therefore, the challenge is to be become an employer of choice to attract and retain the skilled workers.

By comparing the Job Prospect and Jobs Growth Matrix with the ADF Under-strength Strategically Significant Positions, it is possible to deduce that there will be a significant challenge for the ADF to attract the right people for the right job. Many other industries are competing for the same scarce skilled workforce. IT/IT related and management type occupations are the greatest growth areas and many employers will find it difficult to attract and retain these employees.



## ANNEX A – Job Prospects Matrix

Table 3: Job Prospect Matrix & Projected Jobs Growth – Prospects to 2005/06

<b>Occupation</b>	<b>Job Prospect</b>	<b>Projected Jobs Growth</b>	<b>Occupation</b>	<b>Job Prospect</b>	<b>Projected Jobs Growth</b>
Accountants	Good	Strong	Payroll Clerks	Average	Remain Steady
Personnel Clerks	Low	Slight	Finance Advisers	Good	Strong
Insurance Agents	Average	Remain Steady	Human Resources, OH&S and Legal	Good	Strong
Policy Analysts	Good	Strong	Project and Program Administrators	Good	Strong
Customer Service Managers	Good	Strong	Management Consultants and Quality Assurance Managers	Good	Strong
General Clerical	Average	Moderate	Interpreters and Translators	Good	Strong
Computing and IT Professionals	Good	Strong	Air Traffic Controllers	Average	Slight
Driving Instructors	Average	Strong	Flying Instructors	Average	Slight
Marine Specialists	Average	Slight	Pilots	Average	Slight
Ship's Engineers and Officers	Average	Slight	Electrical Trades	Average	Slight
Telecommunications and Electronics	Average	Slight	Communications Trades persons	Limited	Decline
Aeronautical Engineers	Average	Slight	Electrical and Electronic Engineers	Good	Slight
Engineering Managers	Average	Moderate	Mechanical Engineers	Low	Decline
Chefs	Good	Strong	Cooks	Good	Moderate
Flight and Travel Attendants	Average	Remain Steady	Hotel, Motel, Club and Restaurant Managers	Average	Slight
Waiters	Good	Strong	Medical Professionals	Good	Moderate
Nurses and Nurses' Aides	Good	Moderate	Nurse Managers	Average	Slight
Fitness Instructors	Good	Strong	Sport and Recreation Managers	Average	Slight
Marketing, Public Relations and Advertising Professionals	Good	Strong	Sales and Marketing Managers	Average	Moderate
Aircraft Maintenance Engineers	Average	Remain Steady	Mechanical Engineering Trades persons	Average	Remain Steady

<b>Occupation</b>	<b>Job Prospect</b>	<b>Projected Jobs Growth</b>	<b><i>Occupation</i></b>	<b>Job Prospect</b>	<b>Projected Jobs Growth</b>
Automotive Electricians	Good	Slight	Motor Mechanics	Good	Slight
Store Persons	Low	Remain Steady	Security Officers, Guards, Police and Fire Fighters	Average	Moderate
Prison Officers	Good	Moderate	Radio Operators	Average	Slight
Teachers, Tutors and Teachers' Aides	Average	Moderate	Education Officers	Average	Moderate

## ANNEX B – ADF Under-Strength Strategically Significant Positions

Table 4: Under-strength Strategically Significant Positions

<b>Navy (As at 1/10/00)</b>				
<i><u>Position</u></i>	<b>Estab</b>	<b>Strength</b>	<b>% Diff</b>	<b>Reason for Difference</b>
<i>Pilot</i>	130	83	36	Combination of expanding requirement, high historical wastage and training pipeline constrictions.
Observer	104	84	19	Combination of expanding requirement, high historical wastage and training pipeline constrictions.
Seaman Officer	1088	815	25	Combination of expanding requirement and training pipeline constrictions (sea bunks/bridge time).
Combat Systems Operator (Sailor)	891	729	18.2	Combination of expanding requirement, high historical wastage and training pipeline constrictions predominantly at sea. Declining morale and job satisfaction is causing higher wastage in the middle ranks.
Marine Technician (Sailor)	2247	1891	16.8	Combination of expanding requirement, high historical wastage and training pipeline constrictions predominantly at training establishment and more recently the reduced recruiting target achievement. Declining morale and job satisfaction is causing higher wastage in the middle ranks.

<b>Army (As at 02/11/00)</b>					
<b>ECN</b>	<b>Title</b>	<b>Liability</b>	<b>Asset</b>	<b>Short fall</b>	<b>Reason</b>
079	<b>Commando</b>	237	82	66%	High psych category requirements Relies 80% upon transfers from RAInf Deficiencies across all ranks Growing trade. Problem delayed due to Timor rotations
229	Vehicle Mechanic	679	590	24%	Deficiencies at the base ranks Low (79%) recruiting achievement
002	Linguistic Intelligence Spec Duty	56	44	22%	Deficiencies across all ranks High psych category requirements
031	Medical Assistant	563	449	21%	Deficiencies across all ranks
266	Operator Info Sys and Radios	732	603	18%	Deficiencies across all ranks Low (76%) recruiting achievement
237	Missile Number	210	127	40%	Deficiencies across all ranks Low (22%) recruiting achievement with only 8% being finally allocated to the trade after CIT
226	Mechanic Recovery	114	92	20%	Deficiencies at the base ranks Small trade
294	Operator Supply	1618	1267	22%	Deficiencies across all ranks. Low (20%) recruiting achievement. Trade requires positive management.
423	Tech Geomatic	121	117	4%	<b>Deficiency of 21% at CPL rank</b>
035	Operator Movement	175	170	3%	Deficiencies at CPL/SGT ranks Low (36%) recruiting achievement with 0 allocation to trade after CIT
250 271	Operator Artillery Met and Svy Operator Radar	28 41	21 29	25% 30%	Deficiencies across all ranks Low (29%) recruiting achievement, nil for OPAMS (Tgt 5) High separation rates
071 332	Combat Clerk Combat Storeman	347 565	73 122	79% 79%	Deficiencies across all ranks Requires mainly internal transfers Not a base trade
076	Clerk Pay	199	168	26%	Deficiencies at PTE and WO ranks Low (35%) recruiting achievement Small trade
	Officers			N/A	Low recruiting achievements Deficiencies at CAPT/MAJ ranks

<b>Air Force (As at 1 Dec 00)</b>				
<b><u>Position</u></b>	<b>Estab</b>	<b>Strength</b>	<b>% Diff</b>	<b>Reason for Difference</b>
Air Defence Officer	150	116	23%	Significant increase in establishment in 00/01 created shortages from FLTLT to WGCDR.
Ground Defence Officer	88	47	47%	Combination of expanding requirement and systemic shortages across rank profile (FLGOFF to WGCDR).
Nurse	101	81	20%	Shortage at FLGOFF (69%) due to high separation rates and recruiting under achievement.
Pilot	753	643	15%	Combination of expanding requirement, and systemic shortage from senior FLTLT to junior WGCDR.
Airfield Defence Guard	330	230	30%	Shortage predominantly at CPL level (63%) as a result of high separation rates at senior LAC/junior CPL.
Air Surveillance Operator	291	242	17%	Shortage predominantly at CPL level (35%) due to high separation rate at this rank.

Source: Directorate of Workforce Planning and Establishment – 19 Jan 01



